Claims

- [c1] 1. A device for monitoring a patient"s blood pressure, comprising:
 - an optical module comprising an optical source component and a first optical sensor that generates a first set of information;
 - a flexible, thin-film pressure sensor that generates a second set of information; and
 - a processing module, configured to receive the first and second sets of information and comprising a processor that processes this information to calculate a blood pressure value.
- [c2] 2. The device of claim 1, wherein the flexible, thin-film pressure sensor is a sensor that generates the second set of information in response to an applied force or pressure.
- [03] 3. The device of claim 2, wherein the flexible, thin-film pressure sensor comprises a sensing material featuring an electrical resistance that varies with an applied force or pressure.
- [04] 4. The device of claim 3, wherein the flexible, thin-film

pressure sensor is configured to generate a timedependent pressure waveform that varies in response to an applied force or pressure.

- [05] 5. The device of claim 1, wherein the processing module further comprises an analog-to-digital converter.
- [c6] 6. The device of claim 5, wherein the flexible, thin-film pressure sensor is in electrical contact with the analog-to-digital converter.
- [c7] 7. The device of claim 1, wherein the optical module further comprises a first optical source that generates visible radiation, and a second optical source that generates infrared radiation.
- [08] 8. The device of claim 1, wherein the optical sensor is a photodiode.
- [09] 9. The device of claim 8, wherein the photodiode is configured to generate a photocurrent after detecting radiation generated by the first and second optical sources.
- [c10] 10. The device of claim 9, wherein the processing module further comprises an analog-to-digital converter configured to receive and process the photocurrent.
- [c11] 11. The device of claim 9, wherein the processing module comprises firmware that processes the photocurrent

to generate a time-dependent optical waveform.

- [c12] 12. The device of claim 1, wherein the processor comprises computer-readable firmware that processes the first and second sets of information to determine a systolic and diastolic blood pressure.
- [c13] 13. The device of claim 12, wherein the processor fur ther comprises computer—readable firmware that pro cesses the first and second sets of information to deter mine a time-dependent blood pressure.
- [c14] 14. The device of claim 12, wherein the processor further comprises computer-readable firmware that processes the first set of information to additionally determine pulse oximetry and heart rate.
- [c15] 15. The device of claim 1, further comprising an adjustable band configured to attach to a user"s wrist.
- [c16] 16. The device of claim 15, wherein the adjustable band comprises the flexible, thin-film pressure sensor.
- [c17] 17. The device of claim 1, further comprising a finger-worn component that comprises the optical module.
- [c18] 18. The device of claim 1, further comprising a serial interface.

- [c19] 19. The device of claim 18, wherein the serial interface is configured to send information to an external device.
- [c20] 20. The device of claim 18, wherein the serial interface is configured to accept calibration information.